

LISTING OF CLAIMS:

1. (CURRENTLY AMENDED) A method for the production of a shell mould, comprising:

(i) dipping a preformed expendable pattern into a slurry of refractory particles and colloidal liquid binder whereby to form a coating layer on said pattern,

(ii) depositing particles of refractory material onto said coating, and

(iii) drying,

steps (i) to (iii) being repeated as often as required to produce a shell mould having a primary coating layer and at least one secondary coating layer, wherein during at least one performance of step (ii) a gel-forming material is also deposited onto the coating layer formed in step (i) , such that after contact with the coating layer, moisture is absorbed by the gel-forming material thereby causing gelation of the colloidal binder so reducing the time required for drying in step (iii), and wherein the gel-forming material is a super absorbent polymer.

2. (ORIGINAL) The method as claimed in claim 1, wherein the method also includes the additional step (iv), carried out after the final step (iii), of applying a seal coat comprising a slurry of refractory particles and liquid binder, followed by drying.

3. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the gel-forming material is applied onto each secondary coating.

4. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the gel-forming material is applied onto the primary coating layer.

5. (CANCELED).
6. (CURRENTLY AMENDED) The method is claimed in claim ~~[[5]]~~ 1, wherein the polymer is polyacrylamide or polyacrylate.
7. (CURRENTLY AMENDED) The method as claimed in claim ~~[[5]]~~ 1, wherein the polymer is a particulate material and at least 50wt% of the polymer particles are 300 μ m or smaller.
8. (ORIGINAL) The method as claimed in claim 7, wherein at least 95wt% of the polymer particles are 300 μ m or smaller.
9. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the refractory particles are coated with gel-forming material.
10. (PREVIOUSLY PRESENTED) The method as claimed in claim 2, which includes a step of removing the expendable pattern from the shell mould after the last step (iii) or step (iv) when present and preferably a final step of firing the resultant shell mould.
11. (PREVIOUSLY PRESENTED) The method as claimed in claim 10, wherein firing is effected by heating to a temperature of from 400°C to 700°C of a heating rate of from 1°C to 5°C/min, followed by heating to at least 950°C at a heating rate of 5°C/min or more.

12. (PREVIOUSLY PRESENTED) The method as claimed in claim 1, wherein the gel-forming material added during each step (ii) constitutes less than 10% by weight of the refractory particles added during that step (ii).

13. (ORIGINAL) The method as claimed in claim 12, wherein the gel-forming material constitutes less than 3wt% of the refractory particles.

14. (CURRENTLY AMENDED) A shell mould producible by a method comprising:

- (i) dipping a preformed expendable pattern into a slurry of refractory particles and colloidal liquid binder whereby to form a coating layer on said pattern,
- (ii) depositing particles of refractory material onto said coating, and
- (iii) drying,

steps (i) to (iii) being repeated as often as required to produce a shell mould having a primary coating layer and at least one secondary coating layer, wherein during at least one performance of step (ii) a gel-forming material is also deposited onto the coating layer formed in step (i), such that after contact with the coating layer, moisture is absorbed by the gel-forming material thereby causing gelation of the colloidal binder so reducing the time required for drying in step (iii), and wherein the gel-forming material is a super absorbent polymer.

15. (CURRENTLY AMENDED) An unfired precursor to a shell mould for producing a casting, said precursor comprising a shell having a cavity therein in the shape of the casting, the shell comprising a plurality of layers, wherein at least one of said layers comprises a gel-forming material containing absorbed moisture, refractory particles and gelled colloidal liquid binder, and wherein the gel-forming material is a super absorbent polymer.

16. (CANCELED).

17. (CURRENTLY AMENDED) The precursor to a shell mould as claimed in claim [[16]] 15, wherein said polymer is polyacrylamide.

18. (CURRENTLY AMENDED) The precursor to a shell mould as claimed in claim [[16]] 15, wherein at least 95wt% of the polymer particles are 300µm or smaller.

19. (PREVIOUSLY PRESENTED) The precursor to a shell mould as claimed in claim 15, wherein the amount of gel-forming material in any layer is no more than 10% by weight of the refractory particles in that layer.

20. (PREVIOUSLY PRESENTED) The method as claimed in claim 10, further comprising a final step of firing the resultant shell mould.